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EXAMINER

NILAND, P

ATT UNIT PAPER NUMBER

1511

DATE MAILED: 03/24/97

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

#### OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 1/9/97  
☒ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claims

☒ Claim(s) 1-130 is/are pending in the application.  
Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
☐ Claim(s) \_\_\_\_\_ is/are allowed.  
☒ Claim(s) 1-130 is/are rejected.  
☐ Claim(s) \_\_\_\_\_ is/are objected to.  
☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.  
☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.  
☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.  
☐ The specification is objected to by the Examiner.  
☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).  
☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.  
☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_  
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

☐ Notice of Reference Cited, PTO-892  
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_  
☐ Interview Summary, PTO-413  
☐ Notice of Draftsperson's Patent Drawing Review, PTO-948  
☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

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15. The amendment of 1/9/97 has been entered. Claims 1-130 are pending.
16. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

17. Claims 1-130 are rejected under 35 U.S.C. § 103 as being unpatentable over US Pat. No. 5342867 Ryan et al. in view of US Pat. No. 4963636 Mulhaupt et al., SAE Technical paper series 910758 "Application of RIM Urethane to One Side of Glass for Automotive Windows" Csokasy et al., US Pat. No. 3282014 Bamford et al., US Pat. No. 5072984 Jackson, US Pat. No. 5294168 Kronbetter, US Pat. No. 4793099 Friese et al., US Pat. No. 5508111 Schmucker, US Pat. No. 5338767 Sartelet et al., US Pat. No. 4364214 Morgan et al., US Pat. No. 4743672 Goel, US Pat. No. 5529655 Bravet et al., Betamate 73100/73003 Technical Bulletin, the Betamate Structural Adhesives data table, and US Pat. No. 4995666 Schurmann.

Ryan et al. discloses the use of a two component polyurethane adhesive for the bonding of glass to metal such as in a windshield bonded to an automobile, which falls within the

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scope of the instant claims 1-8 and 18-19. Note that the structure to which the window is attached is "load bearing" because it bears the load of the window. The patentee is silent as to the tensile force that the bonded assembly could withstand. However, it is expected that the windshield assembly would necessarily need to withstand the tensile force of the instant claim 88 inherently. The burden is on the applicant to show that the glass to metal bond of Ryan et al. using the two component polyurethane does not inherently possess the tensile force of the instant claim 88. You cannot have car windows falling out when you hit a speedbump. See column 1, lines 4-13; column 2, lines 16-21; column 5, lines 66-68; and column 6, lines 26-33.

Sartelet et al. shows two component polyurethanes to be useful for bonding windows to window profiles at column 1, lines 15-31 and that such adhesives may be cured in 1 minute to about 5 hours (column 1, line 65 to column 2, line 11). This falls within the scope of the instantly claimed set time period and rapid cure. The examiner notes that his personal experience with adhering substrates to other substrates generically has shown him that A. Adhesives are sold based upon their set and cure times, i.e. the label defines many two part adhesives in terms of how long they take to cure and B. routine consideration of the thing to be bonded gives the ordinary skilled artisan the information needed to determine how fast the set should be. It is really a matter of "design choice". If you do not wish to set up elaborate time consuming, expensive jigs, braces, or other holding means you use a fast set adhesive. If the jigs are going to be there anyway, i.e. when you build an airplane, slower

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set adhesives are usable . The ordinary skilled artisan can see that time is money and in an assembly line application, such as building cars, quicker is better.

The compositions of Sartelet et al. contain amines, which falls within the scope of the instant claims 41 and 88.

Csokasy et al. teaches the bonding strength of two component polyurethanes to glass. See the entire document. Note that RIM polyurethanes are two component polyurethanes. Figure two shows the use of glass frit to aid adhesion through the clear increase of surface area and corresponding increase in the number of adhesive bonds which give greater overall adhesion.

Mulhaupt et al. discloses the use of two component polyurethanes as adhesives for bonding metal, glass, and plastics (column 3, lines 24-44; column 4, lines 55-68; column 5, lines 1-16 and 65-68; and column 6, lines 1-16. Column 6, lines 55-56 show that the intention of the patentee is to bond glass to metal.

Goel discloses the use of two component polyurethanes for bonding glass, metal, and plastic and the reasons which polyurethane adhesives are desirable in such bonding uses at column 1, lines 5-68; column 2, lines 1-68; column 3, lines 1-68; column 4, lines 1-68; and column 5, lines 1-21.

Bravet et al. discloses the use of two component polyurethanes to adhere safety glass to the vehicle at column 1, lines 41-52 and throughout the reference.

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Schurmann discloses the window mechanical structure, including the use of adhesive in general (column 2, lines 57-61) for the use of adhesive and the entire document), of the instant claims 1-46 and 71-123, but not the particulars of the adhesion composition and attachment points such as glass frit and primer.

Friese et al. discloses the mechanical structure of the sliding window of the instant claims 126-130 except that it does not disclose the use of the instantly claimed adhesive. See the entire document.

Kronbetter discloses the mechanical structure of the sliding window of the instant claims 126-130 except that it does not disclose the use of the instantly claimed adhesive. See the entire document.

Jackson discloses the mechanical structure of the window of the instant claims 124-125 except that it does not disclose the use of the instantly claimed adhesive. See the entire document.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the adhesives of the instant claims to adhere automotive window glass to any of the instantly claimed assemblies because it is generally known to adhere glass to metal or plastic using the instantly claimed two component polyurethane compositions, as shown by Ryan et al., Sartelet et al., Csokasy et al., Mulhaupt et al., and Goel, Bravet et al. and column 2, lines 52-61 teaches why one would desire to adhesively bond glass to the instantly claimed assemblies which are already known as described above.

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It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the two component polyurethane adhesive of Schmucker as the two component polyurethane adhesive referred to in the above paragraph because the skilled artisan would have expected such a polyurethane to adhere to primed glass and metal, as taught above and at column 4, lines 37-51 in addition to lending the improved properties of Schmucker to the adhered assembly and the method of making the assembly. The composition of Schmucker falls within the scope of the composition of the instant claims 1-29, 33-57, and 60-130. See the entire document.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the amines of the instant claims 30-32 and 58-59 in the above discussed two component polyurethane adhesives because they are expected to give the sag resistance formed via the hydrogen bonding of the urea groups formed upon their rapid reaction with NCO as described by Goel and Schmucker and the applicant states that these are conventionally used in two part polyurethane adhesives such as the betamates described above.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to apply the adhesive bead discussed above in the thicknesses of the instant claims because such thicknesses are expected to be conventionally used and the skilled artisan understands that the adhesive must be thick enough to take advantage of the shock absorbance of the elastomeric polyurethanes yet be thin enough so that the adhesive bead is

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not torn by the weight of the window. Goel describes polyurethane flexibility, shock, and impact resistance at column 1, lines 20-28, which the ordinary skilled artisan will appreciate as leading to the stated conclusion of the examiner with regard to adhesive bead thickness.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the glass primers and the fritted glass of the instant claims to increase the bonding of the polyurethane to glass because such expedients are known to the ordinary skilled artisan as taught by Morgan et al. in the abstract, Csokasy et al. at Figure 2, and Bamford et al. at column 2, lines 22-60 and such fritted material will provide an area of larger surface area to which the adhesive can bond more strongly due to the corresponding increased number of adhesive bonds and mechanical friction.

The method of adhesion of the instant claims is encompassed by that of the above references to bonding glass to a structural member with two component polyurethane.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the automated application methods of the instant claims and inductive heating according to the instant claim 69 because inductive heating of two component polyurethanes is well known for increasing cure rates of the urethanes as taught by the Betamate Structural Adhesives data table which states "All Two Component Urethanes Can Be Induction Cured." and Betamate 73100/73003 Technical Bulletin describes the

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automated application of such polyurethane adhesives and the instant specification shows the claimed apparatus limitations to be well known.

The examiner notes the load bearing attachment members specified by the instant claims 5, 38, 39, and 40. These claims do not exclude structures such as a typical hatchback where the window is adhered to the actual door which has hinges attached thereto. The two part hinge is typical of a hinge, excluding the hinge pin.

The applicant argues that their invention solves a particular problem in the industry. The above references show the claimed solution to be obvious. The examiner sees no unexpected results stemming from the invention of the instant claims which are commensurate in scope with the instant claims and the above cited prior art. The examiner notes the applicant's arguments regarding hinges and load bearing attachment members. However, as stated above, the instantly claimed language does not distinguish over the structures of the prior art because the instant claim language does not specify enough structural limitations to differentiate between gluing a hinge directly to the glass as opposed to gluing the glass to a door with a hinge attached thereto, as in common in the typical hatchback. In other words, the instant claim language does not exclude the hinge portion attached to the glass from having structure which supports the glass such as the member of a typical hatchback which holds the window glass. Note that anything the glass it attached to bears the load of the glass and is therefore load bearing.

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The applicant's arguments with regard to column 2, lines 1-14 of Sartelet et al. are noted. Proper grammatical interpretation of the sentence of column 2, lines 7-11 means that the times of column 2, lines 10-11 refer back to "potlife". This is supported by column 5, lines 19-22 and 57-59. Potlife is indicative of "cure". The applicant shows no evidence that the instantly claimed set and cure are not possessed by the composition of Sartelet et al..

The applicant argues that many of the references supplied by the examiner refer to single component polyurethanes. The examiner concedes that many of the cited references refer to single component polyurethanes. However, two component polyurethanes which are disclosed as useful for bonding glass and/or metal, or glass to metal, or window glass to framing are supplied as secondary references, as stated above. That is why this rejection is made under 35 USC 103. The applicant argues that such references teach away from the instant invention. The references cited with a single component polyurethane are supplied for structural details of the instant claims. The secondary references directed to the two component polyurethanes are properly combined with these details because they teach bonding to glass and/or metal and bonding glass to framing. Thus proper motivation to combine the above references clearly exists. For these reasons, this rejection is maintained.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


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A shortened statutory period for response to this final action is set to expire **THREE MONTHS** from the date of this action. In the event a first response is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than **SIX MONTHS** from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Niland on Monday to Friday from 9:30 to 6:00 whose telephone number is (703) 308-3510. If the examiner cannot be reached and the inquiry is urgent, call Paul Michl at (703) 308-2451. Direct any faxes to members of Art Unit 1511 to (703) 305-5433.

pn

March 21, 1997

  
Patrick Niland  
Patent Examiner  
Art Unit 1511